EBB3-CS-19 2019 Costs and Returns Estimate

Southcentral Idaho: Magic Valley
Corn Silage: Grown Using Genetically Modified Seed

Ashlee Westerhold

Magic Valley

Introduction to Costs & Returns Estimates

The University of Idaho Extension produces crop costs and returns estimates every other year. The overall goal of this project is to provide the Idaho agricultural industry with an unbiased and consistently calculated estimate of the cost of producing various crops and to track the change in production costs per acre and per unit over time.

The University of Idaho's costs and returns estimates are based on economic costs, not just accounting costs. All resources are valued at a market rate or "opportunity cost". Input prices are taken from the U of I's annual survey of agricultural supply companies. The selling price is a historical average, not a current year's price. Production practices are based on data from growers, crop consultants, and extension personnel throughout Idaho. Although production practices may be similar for individual farms, each farm has a unique set of resources with different levels of productivity, different production problems, and therefore different costs. Farm size, crop rotation, age and type of equipment, and the quality and intensity of management are all crucial factors that influence costs. The cost of production estimates show the typical or representative production costs by region based on documented production practices. These production costs are not area averages, rather they are based on model farms for four areas of the state.

University of Idaho costs and returns estimates can be used as a management tool to help producers in three ways:

1. **Templates.** Excel spreadsheets have been created by the University of Idaho to make enterprise budgeting and record keeping an easy task. You can start by substituting our costs and returns estimates with your own numbers. You can also enter them in the "Your Cost" column.
2. **Marketing.** Estimating production costs on a per acre or per unit basis can help you calculate your farm's break-even prices. Knowing your break-even price to cover operating costs and total costs can help with contract negotiations and selling on the open market.
3. **Benchmarks.** The University of Idaho costs and returns estimates are based on a typical or model farm and are calculated annually using consistent methodology. You can use these estimates as benchmarks by comparing your own total costs or specific cost categories to our estimates. This is a good way to find strengths and weaknesses in your production practices.

It's important to remember, just because your production costs are similar to our estimates, that isn't necessarily a good thing. Our model farms are also typically unprofitable! Average producers usually don't make an economic profit (which includes opportunity costs and non-cash costs such as depreciation). Being profitable requires fine-tuned management and a competitive advantage that the average producer doesn't have. (Being average is not okay in farming)

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Background and Assumptions

The University of Idaho's costs and returns estimates are based on economic costs, not accounting costs. All resources are valued at a market rate or "opportunity cost". Input prices are based on data collected annually by the University of Idaho from agricultural supply companies. The selling price for the commodity is an historical average, not a current year's forecast price. The cost estimate shown here is typical for growing corn silage using genetically modified seed under irrigation in the Magic Valley of southcentral Idaho. Production practices are based on data from farmers, crop consultants, and extension personnel. These aren't University of Idaho recommendations. Production practices most closely represent those in Cassia, Minidoka, Jerome, Gooding, and Twin Falls counties. Although production practices may be similar for individual farms, each farm has a unique set of resources with different levels of productivity, different production problems, and therefore different costs. Farm size, crop rotation, age and type of equipment, and the quality and intensity of management are all crucial factors that influence production costs.

The Model Farm

This costs and returns estimate models a 2,200-acre farm with 400 acres in corn silage or field corn, 550 acres in potatoes, 550 acres in sugarbeets, 150 acres in dry beans, and 550 acres in grain.

The farm uses a center pivot irrigation system and surface water delivered to the farm from an irrigation district. The irrigation district charges a flat fee per acre for water. Irrigation power use is based only on pressurization (no lift). Power costs per acre-inch of water applied are calculated using 2019 Idaho Power Schedule 24 Agricultural Irrigation Service rates.

Production Practices

Corn acreage is chisel plowed and disked in the fall. Manure is applied before the ground is disked. It is a common practice for the farmer and the dairy to share the manure hauling and application cost. The ground is roller harrowed and planted in 22-inch rows to genetically modified corn in May. The seeding rate is approximately 40,000 seeds per acre. The field is cultivated once in June. In September, corn silage is custom harvested (chopped, hauled and packed).

Fertilizer rates shown in Table 1 reflect the heavy application of manure. In addition to manure, commercial fertilizer is applied in the spring before planting by a custom applicator. Additional nitrogen is also applied post-plant through the sprinkler system. In addition to tillage operations and the one cultivation, weeds are controlled using two applications of Roundup herbicide, applied once in late May and again in June. No insecticides are applied because the corn seed contain traits that resist corn borer and root worm. Corn silage receives 28 inches of water during the growing season: 2 inches in May, 6 inches in June, 8 inches in July, 8 inches in August, and 4 inches in September. Two inches of water applied before fall tillage is also credited to the corn for a total of 30 inches.

Machinery

Equipment used to produce irrigated corn silage is shown in Tables 4 and 5. Table 4 lists the equipment and their hourly operating costs and ownership costs, while Table 5 lists the equipment and their annual ownership costs. Machinery ownership cost (capital recovery) is based on 75% of the replacement cost of a new piece of equipment, except for trucks. Truck prices are for a used vehicle with a new bed. Capital recovery combines depreciation and interest into a single value. To keep machinery prices current between years in which a comprehensive survey is conducted, machinery prices are adjusted using USDA's Farm Machinery Prices Paid Index. Equipment prices are collected approximately every five years.

The University of Idaho uses the budget generator program *Budget Planner* from the University of California-Davis to produce the various tables shown in

this publication. Machinery operating and ownership costs are calculated based on engineering equations in this program. Machinery operating costs include fuel, lubricants and repairs.

Labor and Management

The cost of labor used in this publication includes a base wage, plus a percentage to account for various payroll taxes (FICA, SUTA & FUTA), and workman's compensation, as well as benefits such as paid vacation/personal leave days, health insurance and bonuses. Labor is classified by the type of work performed. Labor classifications, labor rates and payroll overhead are shown below.

Labor Values

Labor Class	Base Rate	Payroll Overhead	Effective Rate
General Farm Labor	$15.25	15%	$17.55
Truck Drivers	$15.25	15%	$17.55
Equipment Operators	$18.00	25%	$22.50
Irrigation Labor			
Set Move: HL & WL	$17.30	30%	$22.50
Continuous Move: CP & L	$18.00	25%	$22.50

Set Move includes: handlines and wheellines
Continuous Move includes: center pivots and linear move
Payroll overhead for set move systems includes housing

Based on the speed, width and overall field efficiency, *Budget Planner* calculates equipment operator labor hours for all field operations except those performed on a custom basis. Custom operations are listed separately. General farm labor accounts for extra field labor used during planting or harvest. A management fee based on approximately 5% of the total production costs is included. Prior to 2019, the basis of the 5% charge was expected revenue.

Capital, Land and Overhead Costs

Interest on operating capital is charged from the time an input is applied until harvest and is calculated at a nominal rate of 7.00 percent. Interest on intermediate term capital, primarily equipment, is calculated using a nominal rate of 6.75 percent. A general overhead charge, calculated at approximately 2.5 percent of operating expenses, is included to cover unallocated whole-farm costs such as office expenses, legal and accounting fees, cell phones, internet service and utilities. Irrigation power is not included as part of general farm utilities.

Land rent is based on a one-year cash lease for corn and covers the irrigation system ownership costs (depreciation, interest, and insurance). Since charges for irrigation water, repairs and power costs are listed separately, land rent may appear low because land owners pay some or even all these expenses in many cash leases.

Budget Format

In addition to the Background and Assumption pages, this publication has six tables presenting a variety of cost and returns information.

Table 1 shows both expected revenue, based on a specified yield and price, and expenses. Expenses are broken into two main categories: operating and ownership. Operating expenses are those that typically vary with the level of production and involve inputs that are used in a single production cycle. Ownership expenses include a systematic cost recovery over the useful life for inputs used in the production process that have a useful life of more than one year. Machinery and land fall into this category. Operating inputs are organized by category. In addition to the cost per unit and cost per acre for each input, a total cost is given for each category. Table 1 also gives a total of all operating, ownership and total costs per acre, as well as these same categories on a yield basis (per bushel, cwt, ton, etc.).

Table 2 has most of the same cost information presented in Table 1 but the data is organized by operation for both pre-harvest and harvest costs. Operations can define a single activity, such as seed hauling, or multiple activities as in the case of tillage. The quantity of labor is shown for each operation. The cash costs per acre for labor, machinery costs, materials and custom are also specified. Cash overhead expenses are listed separately as are the non-cash overhead.

Table 3 is a monthly cash flow of expenses based on when the operation occurs and when inputs are applied. Field operations are classified as pre-harvest, harvest and post-harvest.

Table 4 lists the equipment used to produce this crop and the costs per hour to operate this equipment. Total

annual hours of use for the current crop and for all crops on the farm is also shown.

Table 5 lists the purchase price and salvage value of equipment used to produce this crop, as well annual capital recovery and cash overhead expenses.

Table 6 provides a ranging analysis, sometime referred to as a sensitivity analysis. It shows how the costs and returns per acre will vary as the yield and/or price ranges above and below the base values from Table 1.

Author
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Disclaimer
The practices and chemicals specified in the publication are not recommendations. Always read and follow the directions printed on the pesticide label. Due to constantly changing pesticide laws and labels, some pesticides may have been cancelled or had certain uses prohibited. The use of trade names for various products simplifies presentation of this material and should not be considered an endorsement, nor is any criticism implied of similar products not mentioned.

UNIVERSITY OF IDAHO

SOUTHCENTRAL IDAHO

EBB3-CS-19

TABLE 1. COSTS AND RETURNS PER ACRE TO PRODUCE CORN SILAGE

	Quantity/ Acre	Unit	Price or Cost/Unit	Value or Cost/Acre	Your Cost
GROSS RETURNS					
Corn Silage	28.00	ton	35.00	980.00	
TOTAL GROSS RETURNS	28.00	ton		980.00	
OPERATING COSTS					
Seed:				**130.00**	
Corn Seed: VT3 (RUR, RW, CB)	0.50	bag	260.00	130.00	
Fertilizer:				**59.90**	
Dry Nitrogen	45.00	lb	0.40	18.00	
Dry P2O5	30.00	lb	0.38	11.40	
K2O	50.00	lb	0.31	15.50	
Liquid Nitrogen	30.00	lb	0.50	15.00	
Pesticide:				**8.60**	
Roundup Power Max 4.5	40.00	fl oz	0.18	7.20	
Ammonium Sulfate	2.00	lb	0.70	1.40	
Custom:				**343.75**	
Custom Haul/Apply Manure	12.00	ton	3.00	36.00	
Custom Fertilize	1.00	acre	7.75	7.75	
Custom Chop, Haul & Pack	30.00	ton	10.00	300.00	
Irrigation:				**121.60**	
Irrigation Power - CP	30.00	ac-in	1.94	58.20	
Water Assessment	1.00	acre	47.50	47.50	
Irrigation Repairs - CP	30.00	ac-in	0.53	15.90	
Labor				**91.85**	
Equipment Operator Labor	2.01	hrs	22.50	45.18	
Irrigation Labor: CP	1.20	hrs	22.50	27.00	
General Farm Labor	0.30	hrs	17.55	5.27	
Irrigation Labor: Chem-Fert	0.64	hrs	22.50	14.40	
Machinery				**44.87**	
Fuel-Gas	2.11	gal	3.25	6.86	
Fuel-Diesel	7.00	gal	3.00	21.00	
Fuel-Road Diesel	0.14	gal	3.50	0.48	
Lube				4.25	
Machinery Repair				12.27	
Interest on Operating Capital @ 7.00%				18.56	
TOTAL OPERATING COSTS/ACRE				819.12	
TOTAL OPERATING COSTS/TON				29.25	
NET RETURNS ABOVE OPERATING COSTS				160.88	

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TABLE 1. CONTINUED

	Quantity/ Acre	Unit	Price or Cost/Unit	Value or Cost/Acre	Your Cost
CASH OVERHEAD COSTS					
General Overhead				20.00	
Land Rent				275.00	
Management Fee				59.00	
Property Taxes				0.00	
Property Insurance				1.47	
Investment Repairs				0.00	
TOTAL CASH OVERHEAD COSTS/ACRE				355.47	
TOTAL CASH OVERHEAD COSTS/TON				12.70	
TOTAL CASH COSTS/ACRE				1,174.60	
TOTAL CASH COSTS/TON				41.95	
NET RETURNS ABOVE CASH COSTS				-194.60	
NON-CASH OVERHEAD COSTS (Capital Recovery)					
Equipment				53.04	
TOTAL NON-CASH OVERHEAD COSTS/ACRE				53.04	
TOTAL NON-CASH OVERHEAD COSTS/TON				1.89	
TOTAL COST/ACRE				1,227.64	
TOTAL COST/TON				43.84	
NET RETURNS ABOVE TOTAL COST				-247.64	

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TABLE 2. COSTS PER ACRE TO PRODUCE CORN SILAGE

	Operation	Cash and Labor Costs per Acre						
Operation	Time (Hrs/A)	Labor Cost	Fuel	Lube &Repairs	Material Cost	Custom/ Rent	Total Cost	Your Cost
Preharvest:								
Irrigation	0.00	27.00	0.00	0.00	58.20	0.00	85.20	
Tillage	0.30	8.06	9.50	6.43	0.00	0.00	24.00	
Manure Application	0.00	0.00	0.00	0.00	0.00	36.00	36.00	
Irrigation Water Assessment	0.00	0.00	0.00	0.00	47.50	0.00	47.50	
Irrigation Repairs	0.00	0.00	0.00	0.00	15.90	0.00	15.90	
Applying Fertilizer	0.00	0.00	0.00	0.00	44.90	7.75	52.65	
Seed Hauling	0.03	0.90	0.11	0.09	0.00	0.00	1.09	
Plant	0.16	9.71	4.29	4.38	130.00	0.00	148.38	
Applying Herbicides	0.14	3.81	3.68	1.51	8.60	0.00	17.60	
Cultivate	0.12	3.17	3.53	1.57	0.00	0.00	8.27	
Chemigation-Fertigation	0.00	14.40	0.00	0.00	15.00	0.00	29.40	
General Pickup Use	0.62	16.76	6.72	2.30	0.00	0.00	25.78	
4-Wheeler Use	0.13	3.60	0.14	0.10	0.00	0.00	3.84	
Service Truck Use	0.02	0.59	0.19	0.07	0.00	0.00	0.84	
Fuel Truck Use	0.02	0.59	0.19	0.08	0.00	0.00	0.85	
TOTAL PREHARVEST COSTS	1.55	88.58	28.35	16.52	320.10	43.75	497.31	
Harvest:								
Harvest	0.00	0.00	0.00	0.00	0.00	300.00	300.00	
TOTAL HARVEST COSTS	0.00	0.00	0.00	0.00	0.00	300.00	300.00	
Interest on Operating Capital at 7.00%							18.56	
TOTAL OPERATING COSTS/ACRE	1.55	88.58	28.35	16.52	320.10	343.75	815.86	

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TABLE 2. CONTINUED

Operation	Operation Time (Hrs/A)	Cash and Labor Costs per Acre						
		Labor Cost	Fuel	Lube &Repairs	Material Cost	Custom/ Rent	Total Cost	Your Cost
CASH OVERHEAD:								
General Overhead							20.00	
Land Rent							275.00	
Management Fee							59.00	
Property Taxes							0.00	
Property Insurance							1.47	
Investment Repairs							0.00	
TOTAL CASH OVERHEAD COSTS/ACRE							355.47	
TOTAL CASH COSTS/ACRE							1,171.34	
NON-CASH OVERHEAD:		Per Producing Acre		Annual Cost Capital Recovery				
Equipment		521.63		53.04			53.04	
TOTAL NON-CASH OVERHEAD COSTS		521.63		53.04			53.04	
TOTAL COSTS/ACRE							1,224.38	

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TABLE 3. MONTHLY COSTS PER ACRE TO PRODUCE CORN SILAGE

	SEP 18	OCT 18	NOV 18	DEC 18	JAN 19	FEB 19	MAR 19	APR 19	MAY 19	JUN 19	JUL 19	AUG 19	SEP 19	Total
Preharvest:														
Irrigation	5.68								5.68	17.04	22.72	22.72	11.36	85.20
Tillage	16.70							7.30						24.00
Manure Application	36.00													36.00
Irrigation Water Assessment								47.50						47.50
Irrigation Repairs								15.90						15.90
Applying Fertilizer								52.65						52.65
Seed Hauling									1.09					1.09
Plant									148.38					148.38
Applying Herbicides									8.80	8.80				17.60
Cultivate									8.27					8.27
Chemigation-Fertigation											14.70	14.70		29.40
General Pickup Use	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	25.78
4-Wheeler Use	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	3.84
Service Truck Use	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.84
Fuel Truck Use	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.85
TOTAL PREHARVEST COSTS	60.79	2.41	2.41	2.41	2.41	2.41	2.41	125.76	174.63	28.25	39.83	39.83	13.77	497.31
Harvest:														
Harvest													300.00	300.00
TOTAL HARVEST COSTS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	300.00	300.00
Interest on Operating Capital @7.00%	0.35	0.37	0.38	0.40	0.41	0.42	0.44	1.17	2.19	2.36	2.59	2.82	4.65	18.56
TOTAL OPERATING COSTS/ACRE	61.14	2.78	2.79	2.81	2.82	2.83	2.85	126.93	176.82	30.60	42.42	42.65	318.42	815.86
CASH OVERHEAD														
General Overhead	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	20.00
Land Rent														275.00
Management Fee	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54	59.00
Property Taxes														0.00
Property Insurance								1.47						1.47
Investment Repairs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL CASH OVERHEAD COSTS	6.08	6.08	6.08	6.08	6.08	6.08	6.08	7.55	6.08	6.08	6.08	6.08	6.08	355.47
TOTAL CASH COSTS/ACRE	67.22	8.85	8.87	8.88	8.90	8.91	8.92	134.48	182.90	36.68	48.49	48.73	324.50	1,171.34

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TABLE 4. HOURLY EQUIPMENT COSTS

		Corn Silage	Total		Cash Overhead		Operating			
		Hours	Hours	Capital	Insur-		Lube&		Total	Total
Yr	Description	Used	Used	Recovery	ance	Taxes	Repairs	Fuel	Oper.	Costs/Hr.
19	4-wheeler	53	150	4.29	0.12	0.00	0.74	1.08	1.82	6.23
19	Chisel Plow - 20'	43	100	34.69	0.91	0.00	10.06	0.00	10.06	45.67
19	Cultivator: 12R 22	47	75	19.25	0.51	0.00	2.23	0.00	2.23	21.99
19	Offset Disk - 20'	39	100	30.00	0.79	0.00	6.02	0.00	6.02	36.81
19	Pickup 1 - 3/4 ton	100	750	9.33	0.17	0.00	3.70	10.82	14.52	24.02
19	Pickup 2 - 3/4 ton	100	750	9.33	0.17	0.00	3.70	10.82	14.52	24.02
19	Planter - 12R 22"	66	125	37.71	0.92	0.00	17.49	0.00	17.49	56.11
19	Roller Harrow 20'	37	100	47.82	1.26	0.00	9.59	0.00	9.59	58.66
19	Sprayer - 30'	56	150	3.14	0.07	0.00	1.64	0.00	1.64	4.85
19	Tractor - 160hp	135	350	31.02	0.98	0.00	8.25	23.70	31.95	63.95
19	Tractor - 185hp	93	400	30.56	0.96	0.00	10.15	27.39	37.54	69.06
19	Tractor - 200hp	90	500	26.05	0.82	0.00	12.49	29.61	42.10	68.98
19	Truck 1P 10-Wheeler	13	370	21.60	0.61	0.00	2.65	3.15	5.80	28.02
19	Pickup 4 - 3/4 ton	48	325	13.27	0.34	0.00	3.70	10.82	14.52	28.14
19	Service Truck	9	80	41.85	1.24	0.00	3.16	8.75	11.91	55.00
19	Fuel Truck	9	80	52.27	1.52	0.00	3.61	8.75	12.36	66.14

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TABLE 5. WHOLE FARM ANNUAL EQUIPMENT, INVESTMENT, AND BUSINESS OVERHEAD COSTS

ANNUAL EQUIPMENT COSTS

						Cash Overhead		
Yr	Description	Price	Yrs Life	Salvage Value	Capital Recovery	Insur-ance	Taxes	Total
19	4-wheeler	6,000.00	10	1,772.31	714.62	19.43	0.00	734.05
19	Chisel Plow - 20'	37,000.00	15	3,552.24	3,854.39	101.38	0.00	3,955.77
19	Cultivator: 12R 22	15,400.00	15	1,478.50	1,604.26	42.20	0.00	1,646.45
19	Offset Disk - 20'	32,000.00	15	3,072.21	3,333.52	87.68	0.00	3,421.20
19	Pickup 1 - 3/4 ton	42,000.00	5	13,750.00	7,771.98	139.38	0.00	7,911.36
19	Pickup 2 - 3/4 ton	42,000.00	5	13,750.00	7,771.98	139.38	0.00	7,911.36
19	Planter - 12R 22"	45,000.00	12	6,232.80	5,236.76	128.08	0.00	5,364.84
19	Roller Harrow 20'	51,000.00	15	4,896.33	5,312.80	139.74	0.00	5,452.54
19	Sprayer - 30'	4,100.00	10	725.05	523.92	12.06	0.00	535.98
19	Tractor - 160hp	135,000.00	20	17,322.05	12,062.30	380.81	0.00	12,443.10
19	Tractor - 185hp	152,000.00	20	19,503.35	13,581.25	428.76	0.00	14,010.01
19	Tractor - 200hp	162,000.00	20	20,786.46	14,474.76	456.97	0.00	14,931.72
19	Truck 1P 10-Wheeler	97,000.00	20	4,000.00	8,878.70	252.50	0.00	9,131.20
19	Pickup 4 - 3/4 ton	42,000.00	12	7,500.00	4,792.18	123.75	0.00	4,915.93
19	Service Truck	41,000.00	20	3,000.00	3,720.03	110.00	0.00	3,830.03
19	Fuel Truck	51,000.00	20	3,000.00	4,645.70	135.00	0.00	4,780.70
	TOTAL	954,500.00	-	124,341.29	98,279.15	2,697.10	0.00	100,976.25
	90% of New Cost*	859,050.00	-	111,907.16	88,451.23	2,427.39	0.00	90,878.63

*Used to reflect a mix of new and used equipment

ANNUAL INVESTMENT COSTS

					Cash Overhead			
Description	Price	Yrs Life	Salvage Value	Capital Recovery	Insur-ance	Taxes	Repairs	Total
INVESTMENT								
TOTAL INVESTMENT	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00

ANNUAL BUSINESS OVERHEAD COSTS

Description	Units/ Farm	Unit	Price/ Unit	Total Cost
General Overhead	400	acre	20.00	8,000.00
Land Rent	400	acre	275	110,000.00
Management Fee	400	acre	59	23,600.00

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TABLE 6. RANGING ANALYSIS - CORN SILAGE

COSTS PER ACRE AND PER TON AT VARYING YIELDS TO PRODUCE CORN SILAGE

	YIELD(TON)						
	27.00	28.00	29.00	30.00	31.00	32.00	33.00
OPERATING COSTS/ACRE:							
Preharvest	497.31	497.31	497.31	497.31	497.31	497.31	497.31
Harvest	300.00	300.00	300.00	300.00	300.00	300.00	300.00
Interest on Operating Capital @ 7.00%	18.56	18.56	18.56	18.56	18.56	18.56	18.56
TOTAL OPERATING COSTS/ACRE	815.86	815.86	815.86	815.86	815.86	815.86	815.86
TOTAL OPERATING COSTS/TON	30.22	29.14	28.13	27.20	26.32	25.50	24.72
CASH OVERHEAD COSTS/ACRE	355.47	355.47	355.47	355.47	355.47	355.47	355.47
TOTAL CASH COSTS/ACRE	1,171.34	1,171.34	1,171.34	1,171.34	1,171.34	1,171.34	1,171.34
TOTAL CASH COSTS/TON	43.38	41.83	40.39	39.04	37.79	36.60	35.50
NON-CASH OVERHEAD COSTS/ACRE	53.04	53.04	53.04	53.04	53.04	53.04	53.04
TOTAL COSTS/ACRE	1,224.38	1,224.38	1,224.38	1,224.38	1,224.38	1,224.38	1,224.38
TOTAL COSTS/TON	45.35	43.73	42.22	40.81	39.50	38.26	37.10

Net Return Per Acre Above Operating Costs For Corn Silage

PRICE ($/ton)	YIELD (ton/acre)						
Corn Silage	27.00	28.00	29.00	30.00	31.00	32.00	33.00
41.00	291.14	332.14	373.14	414.14	455.14	496.14	537.14
42.00	318.14	360.14	402.14	444.14	486.14	528.14	570.14
43.00	345.14	388.14	431.14	474.14	517.14	560.14	603.14
44.00	372.14	416.14	460.14	504.14	548.14	592.14	636.14
45.00	399.14	444.14	489.14	534.14	579.14	624.14	669.14
46.00	426.14	472.14	518.14	564.14	610.14	656.14	702.14
47.00	453.14	500.14	547.14	594.14	641.14	688.14	735.14

Net Return Per Acre Above Cash Costs For Corn Silage

PRICE ($/ton)	YIELD (ton/acre)						
Corn Silage	27.00	28.00	29.00	30.00	31.00	32.00	33.00
41.00	-64.34	-23.34	17.66	58.66	99.66	140.66	181.66
42.00	-37.34	4.66	46.66	88.66	130.66	172.66	214.66
43.00	-10.34	32.66	75.66	118.66	161.66	204.66	247.66
44.00	16.66	60.66	104.66	148.66	192.66	236.66	280.66
45.00	43.66	88.66	133.66	178.66	223.66	268.66	313.66
46.00	70.66	116.66	162.66	208.66	254.66	300.66	346.66
47.00	97.66	144.66	191.66	238.66	285.66	332.66	379.66

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TABLE 6. RANGING ANALYSIS CONTINUED

Net Return Per Acre Above Total Costs For Corn Silage

PRICE ($/ton)	YIELD (ton/acre)						
Corn Silage	27.00	28.00	29.00	30.00	31.00	32.00	33.00
41.00	-117.38	-76.38	-35.38	5.62	46.62	87.62	128.62
42.00	-90.38	-48.38	-6.38	35.62	77.62	119.62	161.62
43.00	-63.38	-20.38	22.62	65.62	108.62	151.62	194.62
44.00	-36.38	7.62	51.62	95.62	139.62	183.62	227.62
45.00	-9.38	35.62	80.62	125.62	170.62	215.62	260.62
46.00	17.62	63.62	109.62	155.62	201.62	247.62	293.62
47.00	44.62	91.62	138.62	185.62	232.62	279.62	326.62